

BRITISH MEDICAL ASSOCIATION, 1888.

THE PHYSICIAN AS "NATURALIST,"

*BEING THE ADDRESS DELIVERED AT GLASGOW,
AUGUST 7th, 1888, BY THE PRESIDENT,*

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THE PRESIDENT intends shortly to publish in a small volume (James MacLehose & Sons, Glasgow) the present Address, now printed for the members only, along with the Address in Medicine delivered at Dublin last year, and a number of documents bearing upon both Addresses, now not easily accessible, being partly out of print, and scattered through various periodicals. The volume will include the principal details of evidence as to the use of alcoholic stimulants in febrile diseases, and of milk as a diet ; also papers on Homœopathy, Brunonianism, etc., published many years ago ; and other subjects connected with changes in medical treatment and medical education within the last hundred years.

GLASGOW, *August 7th*, 1888.

ADDRESS.

MY LORD PROVOST, MR. EX-PRESIDENT, LADIES AND GENTLEMEN,—The first words I speak from this chair, even in advance of those having a personal reference must be words of welcome—welcome not as from a few of us here in this room, but also as from unknown thousands in this great city, to the British Medical Association. My honourable, and also my very good friend, Sir James King, who rules over us not with a “rod of iron,” but with such a happy combination of the *suaviter in modo* and the *fortiter in re*, will pardon me if I anticipate him in this ; because I owe it to him and to you alike to declare to you in this public manner that the labours and anxieties of those of us who have chiefly had the responsibility of providing for this great gathering have been much lightened and cheered by the consciousness that the Honourable the Lord Provost, the magistrates, and all who are associated with them in the government and administration of the city, have been heartily with us in our en-

deavours; and I will add, even in his lordship's presence, that in Sir James King himself we have a chief magistrate who well maintains the dignity of his great office, while diffusing around him an atmosphere of congeniality worthy of the cultured gentleman he is. We have here, then, the elements at least of a meeting worthy to be noted even in the annals of this great Association; a friendly meeting between the representatives of many industries and many arts on the one hand, in the city which is, perhaps, above all others a city of multiplied arts and industries; and, on the other, the representatives of the art of healing, assembled, not only from all parts of this country, but from almost every part of the world. The British Medical Association is, without question, by far the largest, and also by far the most wide spread, of any of those numerous bodies which, founded on the model of the Science Association, have carried out the principle of voluntary combination in regard to objects not personal, not selfish or narrow, but in the highest degree public-spirited and humane. To say any more about these objects now would be not only superfluous, but something like self-laudation on your part through the mouth of your President. I allude to the matter here only to emphasize the remark that as the healing art is probably the most cosmopolitan of the arts, so Glasgow is, beyond all doubt, as regards its commerce

and its varied industries, one of the most cosmopolitan of cities. To place these two, therefore, more in touch with each other than heretofore—to allow the citizens of Glasgow to come face to face with the medical profession in a broad and impersonal sense, as well as with many distinguished individual members of it—is a work which ought of itself to give a special character and tone to the present meeting, and should enable it, in spite of all errors and shortcomings in detail, to be recorded as a very notable fact. There is one great, and in a measure insuperable, difficulty in the way. Glasgow is “out of town.” In the long rows of houses in our West End, brown-papered as to the windows, and practically without an inhabitant, you will yourselves easily perceive indications of the annual exodus. Glasgow, in the beginning of August, is, if possible, even more “out of town” than London in the end of September. I cannot recall these absentees, and especially the better and fairer halves of them, for your advantage. And when I remember, as I have no doubt many of you do, the brilliant society, vice-regal, civil, and military, and the many other distinctions of the delightful and admirably organized meeting in Dublin only last year, I am seized involuntarily with a certain misgiving lest we should not be able to hold our own with that bright and attractive metropolis of the Green Isle. In another respect, also, there is room for a misgiving. It is no easy matter to succeed

to the position, in this Association, of my dear friend of old, Dr. John T. Banks. The courtesy, the amenity, the distinction (in the highest and best sense of the word) with which he fulfilled the duties of the office last year, are fresh in all your memories, and were to myself, personally, a source of enjoyment which I trust I shall never forget. I can only hope to follow him at a distance in the great and honourable duty of presiding over the present meeting.

And this leads me back very directly to the personal question. To say that I thank you, gentlemen, for the high honour you have done me would be a very feeble and conventional use of words. What I can really trust myself to say, because it is true and not conventional, is that during the twenty years or more that a meeting of the Association in Glasgow has been talked about it never once occurred to me, till very recently, to suppose that I was to be thus honoured. During all the earlier period of that twenty years or more, my mind—everyone's mind—was instinctively set upon my late colleague—universally respected both as a distinguished man of science and as a Glasgow citizen—Professor Allen Thomson, as the one man whom the Association would naturally and inevitably have delighted to honour. To have taken my natural place under him would have been to me an unalloyed satisfaction, and all the distinction which I have ever coveted as regards this Association. It has been, how-

ever, your pleasure, first by inviting me to deliver the Address in Medicine in Dublin last year, and next, by electing me now your President in 1888, to accumulate favours, honours, and responsibilities upon shoulders too weak to bear them. All I can endeavour to do is to respond to your unanimous wishes as best I can.

It possibly did not occur to the gentlemen who were so kind and generous as to ask me to deliver the Address in Medicine last year that they were, in effect, thereby stealing from me the materials for the present address. And yet it was even so, indeed, and very obviously so; for how is a man, twice over within the space of twelve months, to discourse of the present state of the medical art and not at every paragraph to be found repeating himself? I will not trouble you, however, with the heart-searchings and grave disquietudes entailed on me by this little incident. At one time I hoped to have got over it by avoiding medical subjects, and speaking to you chiefly about the past history of Glasgow. But here I have found my purpose, if even in process of being matured, altogether forestalled by the very numerous and mostly admirably done publications¹

¹ The most suitable of these that I have been able to look into are the following:—*Constable's Guide to Glasgow* (James MacLehose and Sons); *Glasgow, Ancient and Modern*, with an account of the Bishop's Castle, by George MacGregor, F.S.A. Scot., author also of *History of Glasgow* (Hay, Nisbet, and Co.); *Pollock's Dictionary of the Clyde*, 1888 (John Menzies and Co.); *St. Mungo's Bells, or Old Glasgow Stories*, by A. G. Callant (David

which have been called into existence by the International Exhibition; to the Executive Committee of which I hope, before long, we shall feel that we are under deep obligations in many ways. When you can purchase for the small sum of sixpence all about *Glasgow, Ancient and Modern*, by a first-rate authority; and all about the Clyde, the Exhibition, and what not, for one shilling, it would clearly be out of place for one who is not even a Glasgow citizen by birth or education, but only by adoption, to occupy much of your time upon the subject. I will confine myself therefore to a very few words about the place in which we are assembled.

GLASGOW IN THE SIXTH CENTURY.

It requires an effort of the imagination by no means slight or trivial to recall, as before the mind's eye, the beginnings of the city of Glasgow. The majestic, and in some respects unique, cathedral church, in which many of you have worshipped and listened to eloquent words this afternoon, is, of course, a standing evidence that Glasgow is not only a commercial and modern, but also a very ancient and historic city. But the historie

Bryce and Son). A work of more research and elaboration, and well worthy of the attention of all who can afford the time is *Old Glasgow: the Place and the People; from the Roman Occupation to the Eighteenth Century*, by Andrew Macgeorge (Blackie and Son). Also, *The Clyde, from its Source to the Sea, etc.*, by W. J. Millar, C.E. (Blackie and Son).

vision must go back much further into the ages than even that venerable building to find the beginnings of ecclesiastical—perhaps, too, of commercial—life in Glasgow. You must try to fancy a small—and, to the modern eye, utterly insignificant—church, perhaps built of wood, perhaps of very rude and primitive masonry, surrounded by “a rude village of huts, constructed probably of wood and wattles,”¹ the dwellings of the clergy and their dependents, scholars, artisans, and labourers in the latter part of the sixth century. Place this small and rude church and village—this “city set on a hill,” to use the familiar expression of the New Testament—in the midst of a grove of trees, perhaps of some growth and stateliness, with which, or some of which, the name of St. Ninian has been associated, the tradition being that this very early missionary had for a time a cell here more than 150 years before; and that the “delicious density of overshadowing trees,” and the holy memories, had attracted even then the regard of the pious founders of this Christian colony. Such was the Glasgow of Kentigern or Mungo, the “beloved one” or “dear friend” of St. Serf, of Culross, according to the old traditions which, when disencumbered of their mythical element, still leave us in no doubt as to the life and character of one who was not only a true saint, but also a real civilizer, and not only a civilizer, but also a ruler of the highest

¹ Macgeorge, *ut supra*, p. 16.

class, strong in his nobility of character as well as of birth; a grand personality in those rude times, and a true Christian hero, powerful in word and deed to bring a barbaric people into the ways of righteousness and peace. The people over whom his spiritual influence extended were the Britons of Strathclyde, including a large part of south-western Scotland, and several counties in the north of England. The king's capital was Alcluith, or, as it was afterwards called, Dunbarton, the *Fort of the Britons*; the spiritual centre was the city of St. Mungo, and the story of the life and work of this first bishop of an unruly, yet strong and capable race, forms a bright and thoroughly human and beautiful episode in the early history both of Scotland and of Wales, whither he retired from persecution when driven for a time from Glasgow by the opposition of the King, to form a new centre of influence in what is now known as the see of St. Asaph.

Kentigern died A.D. 603; and for 500 years thereafter Glasgow can scarcely be said to have a history. It is tolerably certain, however, that a small fishing village grew up on the right bank of the Clyde, and came into notice as a partially independent community in the very beginning of the thirteenth century. At this time the original church of St. Mungo had been replaced by another, probably wooden, erection, which, not long after its dedication in 1136, was destroyed by fire, and rebuilt again by Bishop Joceline in 1197.

But it is very doubtful whether the present cathedral, or any portion of it, existed at that time.¹ The fishing village just spoken of was the aboriginal source of commercial, as distinguished from ecclesiastical, Glasgow. Half a century later it had acquired something like municipal independence, or freedom from the tolls and customs levied by the still more ancient burgh of Rutherglen. In the latter part of the thirteenth century a bridge over the Clyde was built, probably of wood in the first instance. The town at this time, and for long afterwards, consisted of the residences of the clergy and their retainers, with the Bishop's Castle, all in the neighbourhood of the cathedral; with a straggling street extending in the direction of the river, and ending in the Fishergate or Bridgegate. Even in the middle of the fifteenth century, when its resources had been considerably developed, and the University founded, the town had a population probably not exceeding 2000, and occupying very much the same area.² All around were the remains of the original

¹ Mr. Macgeorge, supported by the architectural authority of Mr. Honeyman, maintains that the present cathedral was not even commenced till after 1238, under Bishop Bodington; and that "the only portion which remains of the building consecrated in 1197 is a small pillar and part of the vaulting in the south-west corner of the crypt."—*Loc. cit.*, p. 106.

² In 1450, and probably for long afterwards, Glasgow was regarded as a peculiarly healthy and attractive place. The papal bull founding the University speaks of it as a "place well suited and adapted to the purpose, on account of the healthiness of the

forest, with all kinds of wild game, many marshes, and much uncultivated land. None but vessels of very shallow draught could navigate the river; for even at Dumbuck, twelve miles below the bridge of Glasgow, the Clyde was easily fordable on foot.

I do not mean to pursue this history further; but I ask you to contrast these small beginnings with the present city, or rather aggregate of cities, having a population of 750,000, numerous docks and shipbuilding yards, a wide range of varied industries, a commerce spread over every sea, almost innumerable churches and schools, and a university already 437 years old, and numbering more than 2000 students. Out of that narrow river-channel, which was formerly fordable at Dumbuck, and which all the way down to Dunbarton was beset with shallows impeding navigation, there has within the last few days gone forth from the ship-yard of Messrs. J. and G. Thomson at Clydebank, without the slightest impediment, the *City of New York*, the largest vessel afloat with the single exception of the unlucky *Great Eastern*. And this very *City of New York*, 580 feet long by 63¼ feet beam, 30 feet draught, 10,500 gross tonnage, and

climate, the plenty of victuals, and of everything necessary for the use of man." Even in the course of last century travellers from the South are enthusiastic about the salubrity and the fine appearance of Glasgow, comparing it in these respects with Edinburgh and other places. We have not been accustomed to such compliments in these later days.

20,000 horse-power, fitted up like a palace, and lighted throughout by electricity, is the descendant by evolution of the little *Comet*, which, drawing only four feet of water and driven by engines of three horse-power, was the wonder of the Clyde in the year 1812, and was only just able by careful navigation, to avoid getting aground in the state of the river at that time. But in order that I may avoid the imputation of unduly exalting, in this place, the city of my residence and occupation, I will conclude this part of my address in the well-informed and well-chosen words of H.R.H. the Prince of Wales, on the quite recent occasion on which he honoured us by opening, in person, our International Exhibition :—

“ In the application of science Glasgow can point with just pride to the multifarious industries which have here found a home. To the widely-different character of these industries, which secures to the population of this district immunity from many of the risks which necessarily attend devotion to one department of labour, it is only possible to allude in general terms. Here there exist and flourish side by side great establishments for shipbuilding, the production of marine machinery, locomotives, mill machinery, and other mechanical appliances for the working of iron and coal, for the production of mineral oil, the manufacture of thread, glass and pottery, carpet-weaving, dyeing and printing. It must not, likewise, be

overlooked that Glasgow was the cradle of the steam carrying trade with America and the great mercantile centres of the world."

Whether, then, we look to the old and historic ecclesiastical foundation of this city of Glasgow, and to its position as the seat of a university founded by Pope Nicholas V. in 1450-1, and still prospering; or whether we regard it as a modern city of commerce, handicrafts, and manufactures, we feel confident that in bidding you welcome to our precincts, we may claim to be and to appear to you, in the words of St. Paul, "citizens of no mean city."

THE PHYSICIAN AS "NATURALIST."

In seeking about for a topic on which I might occupy your attention this evening, I have been led to make some special reflections on the curious survival among us of an ancient way of thinking that is presented to the mind by the designation, in English, of the *physician*, or, as Chaucer has it in his well-known Prologue to the *Canterbury Tales*, the *Doctour of Physike*. I do not know if it has occurred to many of you to observe that in no other language than our own has this survival occurred. The surgeon—*chirurgus*—has, indeed, kept from a very remote antiquity the title which was given to him in the days of his subjection as the *handworker* or *operator* under the direction of the physician. But the most remarkable thing about

this last, and conventionally the higher, title is that while it seems to recall a time when the medical art was distinctively associated in the minds of men with the study of *φύσις*, and when the healer of the sick was regarded as in a very special if not exclusive sense a *student of Nature*, it is very hard to discover from the traditions of language, either our own or any other, when this idea first took shape—how and when the notion began to be entertained that the most fitting title for the most highly honoured representative of the medical art was to call him, distinctively, a *naturalist*, or, if you will, a natural philosopher or *physicist*. It has occurred to me that it may not be an altogether unprofitable task for one who holds a Chair in this University popularly designated as one of *Physic*, to inquire how the idea represented in this word *physic* came first into existence, and how it got floated into such a degree of popularity as not only to have practically displaced to a considerable extent in our own language the much older one of *medicine*—that is, healing—as applied to the art itself, but to have got itself into currency as applied to the very tools of the art, the drugs with which the physician, so called, was supposed mainly to work his cures. It is surely a very marked instance of what the late Archbishop Trench called the *degeneration* of words, that in the course of ages all that nasty stuff which the Doctor Slops of the past made it a duty to send

remorselessly down the throats of the lieges, whether in the form of pill, powder or potion, should have got itself called by the name of *physic*—that is, Nature's remedies; while it is the very irony of historical fate that this word, in this sense of it, should now be current in these islands only. "Throw physic to the dogs, I'll none of it," was not a phrase that would bear literal translation even in Shakespeare's time, I believe, into any other modern European language; but it perfectly represents the tradition of our own language in the time of Shakespeare, a century or more after Henry VIII. granted their charter of incorporation to the Royal College of Physicians in London—a tradition which continues active up to the present hour.

If I propose to you to look with me a little into this historical question, it is not as a mere academical exercise in philology, though even from that point of view curious and interesting enough; but because it contains within this a further inquiry which, even in this nineteenth century, may be turned to profitable account in an assembly like this. I hope to be able to show you that these words *physician* and *physic* have relations with some of the very best and highest traditions of antiquity, and that it may be possible for us even now to make an application of them which will repay and at the same time justify their retention in the English language, although, it may be, tending

also to discover certain deficiencies which still unhappily exist in our systems both of medical and general education.

My argument, in other words, will be this:—For a series of indeterminable ages, from the time, very probably, of Hippocrates downwards to what we call the Dark or Middle Ages, the tradition has continuously existed that the *healer* or physician of the highest class ought also to be, in a very real sense of the word, a *naturalist* or perhaps a man of *science* (physical science being, of course, understood); that it is his prerogative to be trained and exercised after the best manner and according to the most thorough discipline of the science of his age; and that he ought to be (or, at least, that he has been in very remote times) regarded as being admirable and trustworthy as a healer or physician, chiefly in proportion to the confidence reposed in him as a *naturalist*, that is, a humble, reverent, and exact follower and student of Nature.

THE HIPPOCRATIC TRADITION.—ANTICIPATION OF THE “NOVUM ORGANUM.”

You are all familiar, no doubt, with the magnificent opening of the *Novum Organum*,¹ which ascribes to Man as the “minister (or servant) and interpreter of Nature,”

¹“Homo, Naturæ minister et interpres, tantum facit et intelligit quantum de Naturæ ordine re vel mente observaverit, nec amplius scit aut potest.”—Aph. i.

only so much either of power or of knowledge as he has gained by observing the order of Nature, outside of which he neither knows nor can do anything. Now, it is a curious fact, which has not escaped the editors of Bacon in recent times,¹ but which may require, nevertheless, to be brought to your notice, that the very word or phrase here used to designate the limitations imposed upon the *power* of Man in reference to Nature is the one which, in a very remote age, had suggested itself to Hippocrates as specially indicating the function of the healer. He is, he must be (according to Hippocrates), “the servant of Nature”—*ὑπηρέτης φύσεως*. Nor is this a mere accidental expression, which might be passed over as a coincidence not extending below the surface. On the contrary, the expression is taken up and specially commended by Galen (surely the best of all authorities on such a point) as being of the very essence—the key-note, as it were, of the Hippocratic teaching, with which all the later authorities (Aristotle and the Peripatetics), as he tells us, were essentially in accord. So that, as we are now being taught that Bacon was the real author of Hamlet, it might be a perfectly fair, if not actually verifiable, literary retribution to maintain that Hippocrates initiated the *Novum Organum*; or, at least, that the root-principle of all that is best in that great

¹ See note at p. 157 of Ellis and Spedding's edition of Lord Bacon's works, vol. 1870.

fragment was not only suggested but actually expounded and worked upon as the true method of medical science and practice more than two thousand years before. That Bacon should have derived this remarkable expression from Hippocrates (though he nowhere says so) is far from improbable, inasmuch as, scattered through his numerous writings, there are many evidences of his acquaintance, more or less exact, with the father of Greek medicine; of whom, in more than one place, he particularly notes the "ancient and serious diligence" in recording special cases, as opposed to the "much iteration and small addition" of medical science in general, which, he says, has been "more professed than laboured, and yet more laboured than advanced; the labour having been, in my judgment, rather in circle than in progression."¹ But, in truth, Bacon's animadversions on the medical art are (as Harvey said of them) very much after the manner of a lord chancellor; and it is perhaps less of a marvel that he should have failed to indicate Hippocrates as the author of one of his own most pregnant sayings, than that he should have entirely overlooked and neglected the discovery of the circulation of the blood, which was being made and published under his own eyes; the direction of his

¹ *Advancement of Learning*, Book 2; compare *De Augmentis Scientiarum*, Lib. iv.; but a far more depreciatory estimate of Hippocrates is to be found in *Temporis Partus Maximus*, chap. ii.; Ellis and Spedding's edition, vol. 1. 591, vol. iii. 373, 534.

thoughts as to medical progress, meanwhile, being in no single instance, I think, such as would approve itself to a modern nineteenth-century physician, or would appear to him to contain even the germ of any substantial improvement.¹

But to return to Hippocrates and his remarkable declaration, that the *ιάτρος*, or healer, is the servant of Nature (*φύσις*). This expression, as I have already said, is no merely casual one in the writings of Hippocrates; for, in one of the two places² in which Galen remarks upon it (probably six hundred years afterwards, and in the full knowledge, therefore, of all that could be said for or against the expression by rival sectaries) he does not hesitate to declare that Hippocrates was "*the first* to observe the works of Nature;" and that he "is always admiring and insisting upon the sufficiency of Nature, whereby what is necessary for the life of all animals is done *ἀδίδακτος*, that is, spontaneously and without apparently conscious effort." He thus places Hippocrates distinctly in advance of, if not above, Aristotle and the Peripatetics, in respect of originality in the study of *φύσις*; and he further maintains that Erasistratus, the Alexandrian anatomist,

¹ See the criticisms above referred to on the science of medicine, and in connection with some of these, the very singular exhibition of Bacon's own mind upon the subject in detail, in the *Historia Vitæ et Mortis*, vol. ii.; and the Medical Remains at the close of vol. iii. of Ellis and Spedding's edition.

² Galen, *Op.*, edit. Kuhn, xv. 309, xvi. 35.

had adopted an inconsistent attitude towards Nature, and that his followers had exposed themselves to ridicule by their unintelligent criticism on what was simply a development, by the Peripatetics, of the *physiology*, that is, Nature-teaching of Hippocrates. It is not necessary to go into this old controversy now further than to show that, by the very fact of its having become a controversy at all, the position of the *ιατρός*, or healer, as the "servant of Nature," must have been very well known not only to Galen but probably also to Aristotle; and through these to the Arabian physicians and to the whole of the Middle Ages, of which they were the teachers and lawgivers. And while a good deal of Galen's commentary is of course antiquated and little instructive for us here, there is a curiously modern look about one part of it, which shows that exactly the same great evils which have grown up about the art of medicine in later times, and on which I had something to say in my Dublin address of last year, had already become rife in the second century of the Christian era, long before the remoter East had sent us that long array of outlandish drugs, or *physic* (popularly so called); and with these the many ponderous tomes of medical philosophy, which were by and by re-translated from Arabic into Latin, and thus exercised a dominion alike over the scholars and physicians of the Middle Ages. Hippocrates, in Galen's opinion, was eminently right in calling the physician the servant of Nature; but this

expression, he adds, " will apply only to the true *healer* and not at all to the mere *druggist*, who might more properly be called the enemy and adversary both of Nature and of the sick. For the healer acts only in view of the more continuous processes of Nature, in her innumerable ways of preserving the bodies (of animals), which (adds Galen), if I were to recount here, I should have to transcribe the whole of my treatises on the *Uses of Parts*. Therefore (he adds) it is not to be wondered at that Nature should be said (that is, in the place of Hippocrates on which he is commenting) to be all-sufficient ; for he himself has written elsewhere, ' our natures are the healers of our diseases.' " ¹

Nor did Hippocrates, the Father of Medicine, escape the reproach which it has been so easy and so profitable in many ways to fling at those who, in a later day, have proceeded in accordance with his precept, if not his example. We hear chiefly from Pliny and Cælius

¹ Galen, *Comm. in Hippocrates περὶ τροφῆς*, xiv. The isolated position of this last expression (so often ascribed to Hippocrates, though occurring in a work very certainly post-Hippocratic in date) might expose it to the suspicion of being an after-thought, and perhaps a graft from the Peripatetic or Aristotelian philosophy of " Nature " ; but Galen's reference here shows that he, at anyrate (by far the best authority we have on what was, or what was not, Hippocratic), recognized the often-quoted "*vis medicatrix naturæ*" as being distinctively on the lines of the older Hippocratic tradition. I may take this opportunity of acknowledging my great obligations to that most eminent and most admirable of medical scholars, Dr. Greenhill, formerly of London, now of Hastings, for some of these references.

Aurelianus of a certain Asclepiades, of Bithynia, a contemporary of Cicero, whose true character it seems rather difficult to decipher, but who at least may be said to have been a fashionable physician in Rome, with a brand-new system of his own. Asclepiades, whose rôle in the treatment of disease seems to have been one of constant interference, or, as we should say, of meddling physio, only (it is believed) using, as a rule, and in a temporizing kind of way, the mildest and most agreeable of medicines,¹ had, of course, no appreciation at all of any one who, in his character of a healer, professed to be a "servant of Nature." He said, in fact, that, in speaking of Nature as a kind of intelligent principle, Hippocrates was (not to put too fine a point upon it) talking nonsense. Nature is too often bent, not upon healing the man, but (as a witty member of this Association once said in my hearing) on putting him into his coffin! Hippocrates, as the servant of Nature, is simply a *waiter upon death* (θάνατου μελέτην). The true business of a physician is to "make himself master of the occasion;" that is, to shove old dame Nature out of the way, perform the *cure tuto, cito, et jucunde*, and claim all the credit; which, no doubt, he did in Rome, as the quacks in all ages

¹ He is reported to have been the inventor of the phrase: *tuto, cito, et jucunde*, as applied to medical treatment in general. But he also employed, according to Pliny, magical remedies to a great extent. (See Le Clerc, *Histoire de la Médecine*, 2nd partie, l. 3, cc. 4-7.)

have done everywhere, with great comfort and advantage to himself, and (let us hope) with the minimum of injury to his patients.

The truth and the falsehood that underlie this old-world argument I will not attempt to discuss this evening; having done so already on more than one occasion. I am alluding to it now mainly to show that the position of him whom we now call the physician, in reference to *φύσις*, was a well-recognized one long before the origin of the term *physicus*, as applied to him in the Latin of the Middle Ages and the French of the thirteenth century; from which, in all probability, we have derived our English word. What I have now to do is to inquire how far we are maintaining, in this nineteenth century of ours, the position assigned to Hippocrates by Galen (and, I have no doubt, rightly assigned) of being prominent among the seekers into *φύσις*, or, at all events, capable workers in this field, in accordance with the methods and advances of modern physical science.

THE PHYSICIAN IN THE MIDDLE AGES.

It may be not unimportant for this purpose to remark that, so far as we can judge of him from literature, the physician of the Middle Ages, though retaining the name, was in a very small degree, if at all, cultivated according to the type. Chaucer's Doctour of Physike, though very far indeed from being a pedant, was

assuredly much more of a *learned* than of a *scientific* physician. He was "grounded in astronomy (astrology);" he spent much of his own time and his patients' in "magike naturel," which, though probably a very curious type of "physic," must not be supposed to be at all suggestive of the "black art" or of any kind of tampering with the powers of evil.¹ In other respects he was a "very parfite practisour," probably full of good common sense, and genial human nature, well up in the old Hippocratic doctrine of the *humours*, and in close relations with the apothecaries, "to send him dragges and his lettuaries;" but there is no hint of anything at

¹ "Natural Magic," in Chaucer's day, was probably only a kind of astrological prognosis, and therewith (as the two succeeding lines show) an application of supposed means of cure resting upon the *arcana Naturæ* as then supposed to be accessible for this purpose. Although the "images" referred to may carry, even to our minds, a suggestion of the practices which were ascribed to the practitioners of witchcraft much later (even in the eighteenth century in the well-known case of Maxwell of Pollok, who was supposed to have been bewitched in some such way) there is no hint of this in Chaucer. But the course of history shows, and the famous Faust legend illustrates, the tendency of the popular imagination to associate "natural magic" with the supernatural; or, as Naudé puts it in his curious apology, to confound "*la magie diabolique avec la naturelle.*" Naudé, *Apologie pour les Grands Hommes soupçonnés de Magie*; especially ch. 2 "*De la Magie, et de ses espèces.*") Gabriel Naudé, the author of this most interesting and learned little work, was born in Paris A.D. 1600. He studied medicine in 1622-23, and in 1625 published the first edition of this book. He afterwards became librarian to Cardinal Mazarin.

all resembling genuine research (as we now understand it), nor even of the observation of natural phenomena in any really practical fashion. How, indeed, could there be, as we have every reason to believe that the thing at this time hardly existed? The fate of Roger Bacon in the century before Chaucer was an amply sufficient warning to the good-natured and easy going doctors of his time that anything like original research into *φύσις* was dangerous, nay, liable to be proscribed and punished with imprisonment, perhaps with the fagot, unless it proceeded exactly on the lines of St. Thomas Aquinas, the “angelic doctor.” It was very much easier and more comfortable, in every way, to stick to Hippocrates and his “humours,” where everything was sure and safe; and to add a little astrology, which at least was permitted, if not encouraged,¹ and could get no one into trouble. And when we come down more than a century and a half to Rabekais, two centuries to Montaigne, three centuries to Molière and Guy Patin, we find the position still much the same, or rather, in all probability, worse, as respects the

¹ Judicial astrology, however, which (according to Naudé) was “l'enfant supposé de l'Astronomie,” was (he says) very properly condemned by the Church, “non point comme suspect de magie, mais comme une science vaine et chimerique, *quæ stellis ea quæ geruntur in terrâ consecret*; qui veut penetrer dans nos destinées et qui par la témérité qu'elle a de vouloir s'égalér à la Providence, en fouillant dans l'avenir, combat directement la Religion.” So that Chaucer's Doctor of Physike was, perhaps, a heretic after all!

physician; although surgery and anatomy may have been making some steps in advance. I apprehend that the doctor of medicine in the middle of the seventeenth century in France, unless he has been caricatured out of all recognition by Molière, must have been altogether the most stupid, pompous, brainless formalist that ever in any age of the world practised the art under a learned title. Scholastic lore, such as it was (and that, too, of a very poor and superficial kind) had eaten out the heart of him, and at the same time puffed him up into the *simulacrum* of a personage, who rode upon his mule with gorgeous trappings, and wore a robe, and surrounded himself with a wall of *etiquette*, which only served to conceal gross ignorance. The best of them, such as Guy Patin, Dean of the Faculty, who has left us a transcript of himself in almost innumerable familiar letters, were men of much conventional learning and good intentions, but wholly without insight, and tied up in chains of routine. The worst of them were, probably, what Molière describes, no doubt with pardonable and amusing exaggeration. Molière, indeed, could hardly fail to find out and make ridiculous for all time the weak points of such a medical *régime* as then existed. Everyone must remember M. Tomès in *L'Amour Médecin*,¹ who, when told as a matter

¹ It is worth while here to give the whole of this amazing dialogue, the point of which, as regards the present discourse, consists in the fact (I believe well-ascertained) that Molière had in

of fact that his patient was dead and buried, replied that *that* was impossible, because Hippocrates had said that this particular kind of case was not fatal except on the fourteenth or the twenty-first day. Crushing rejoinder—"Hippocrate dira ce qu'il lui plaira ; mais le cocher est mort !"—the force of learned folly could go no further. The satirical portrait of Thomas Diafoirus, which I have had occasion to quote before now,¹ and the magnificent installation of Argan in the *Malade Imaginaire*, remain for us and for our remotest successors, to show how the art of healing may degenerate under the influence of scholasticism, and how base a

view in M. Tomès (*i.e.* the *renesectionist*) one of the four court physicians of Louis XIV., all of whom are caricatured under the thin disguise of Greek names carefully adapted to suggest to the audience of this particular play their most striking and ludicrous personal characteristics. "*M. Tomès. Comment se porte son cocher.—Lisette. Fort bien. Il est mort.—T. Mort ?—L. Oui.—T. Cela ne se peut.—L. Je ne sais pas, si cela se peut ; mais je sais bien que cela est.—T. Il ne peut pas être mort, vous dis-je ?—L. Et moi, je vous dis qu'il est mort et enterré.—T. Vous vous trompez.—L. Je l'ai vu.—T. Cela est impossible. Hippocrate dit que ces sortes de maladies ne se terminent qu'au quatorze ou au vingt-et-un ; et il n'y a que six jours, qu'il est tombé malade.—L. Hippocrate dira ce qu'il lui plaira ; mais le cocher est mort.*" *L'Amour Médecin*, Act 2, Scene 2. Compare with this piece of admirable fooling the scene in *Le Mariage Forcé* (sc. 6), where the medical philosopher, Pancrace, overwhelms an unseen adversary with Aristotelian Billingsgate.

¹ *Medical Education, Character, and Conduct*. Introductory Addresses, delivered to Students of Medicine in Edinburgh and Glasgow, 1885, 1886, 1882. MacLehose and Sons, 1885, p. 63.

creature it was at least *possible* to represent a "physician" as having become in the days of Louis XIV., in the midst of a most brilliant outburst of literature and art, at the very time when Harvey's great discovery was slowly making its way against prejudices derived from the darkest of the Middle Ages, and the still overpowering authority of Aristotle and of Galen.

But at this time the Faculty of Medicine in Paris was probably the last retreat of obscurantism in all Europe, at least within the domain of the physician. In Italy, in England, in Switzerland, in Germany, in the Low Countries, the spirit of observation and experiment was awakening from a long sleep ; and in many departments—anatomy, botany, physiology, surgery—things were moving on apace ; but the physician was almost everywhere belated in the race. Even down to the last century, the man of *learning* (of the type of Linacre and Caius) in the Royal College of Physicians of London greatly predominated over the man of *science*, as exemplified in William Harvey ; while Oxford and Cambridge, which alone could open the portals of the College, were absolutely *nowhere* as schools either of science or of medicine ; and neither taught, nor professed to teach, anything but a mostly mediæval curriculum. And thus it came about, so late even as the year 1815, that the curious anomaly of the "double qualification" obtained a legislative

sanction in English medical education. For while, in most European countries, the State and the Universities co-operated in arranging and controlling the issue of a single qualifying diploma for the general practitioner, the Royal College of Physicians of London was still too much the college of a learned *caste* to allow of their exclusive privileges being shared by any but University graduates; while the two great English Universities were altogether too helpless, as regards the necessary discipline of a medical career, to make it even possible for them to afford the slightest assistance. The Royal College of Surgeons, on the other hand, which had for ages concerned itself only with anatomy and surgery, to the exclusion of physie, continued on the even tenor of its way, including in its membership men ignorant of Latin, but instructed as regards fractures, dislocations, and surgical procedures generally; while the Worshipful Company of Apothecaries, cleverly perceiving and taking advantage of the enormous gap which was at once apparent between the technical discipline of the pure surgeon and that required for the all-round practice of the medical profession, marched into a position of legal independence through this gap, and, from being the humble servants of the physician, obtained for their licentiates not only the exclusive right to dispense medicines, but the status of prescribing them also, and thus a perfectly just and well-earned rivalry with the physician all over England. In Scotland we arranged

matters somewhat differently ; but the case of Scotland would imply a longer discussion than I can afford at present ; and as I have already dealt with this contrast some years since, in another address,¹ I will pass it over now, at least in its political aspects. Fortunately, the sequel of the history, in so far as it dates from the Medical Act of 1858, is well known to most of us, and need not be here dwelt upon.

MODERN PHYSIC.—THE COLLEGES AND THE UNIVERSITIES.

What I am chiefly concerned to bring under your attention, however, in this connection is that, according to the historical development, or evolution, of medical education in this country, and especially in England, the physician, in the sense of *Naturæ studiosus*, the devotee of *φύσις*, as aforesaid, stood a very fair chance of being altogether, and finally, suppressed and wiped out of existence. Before Linacre, in 1518, obtained from Henry VIII. the letters patent which founded the Royal College of Physicians, we are told that the practice of physic was chiefly engrossed by illiterate monks and empirics ; while the sole power of licensing practitioners of medicine lay with the bishops in their several dioceses ; the survival of the power, as you know, remaining, up to a comparatively recent date, with the Archbishop of Canterbury in the Lambeth

¹ Introductory Address for 1882-83 (as cited above), pp. 10-13.

degrees. The charter of the College itself alludes to the "great multitude of ignorant persons, of whom the greater part had no insight into physie, nor in any other kind of learning"—who, nevertheless, rashly undertook and boldly practised the treatment of disease. But we may be nearly certain that Thomas Linaere, the pupil of Angelo Poliziano, the friend of Erasmus, the professor of Greek in Oxford, and the instructor in that language of Sir Thomas More, was not a particularly likely person to originate or patronise the kind of studies which, a full century later, shed a lustre on the college and on England in the person of William Harvey; and, although it is on record that Linaere, about this time, founded lectures on physie both in Oxford and Cambridge Universities, it is also very certain that the origin of anything like a medical school, involving the teaching of the art in a practical sense, was of much later date, and that, up to the present century, nothing like an efficient medical discipline existed in either university; so that the learned graduates who formed the ruling body in the English College of Physicians continued (no doubt with many notable exceptions) to be distinguished more as the inheritors of the Hippocratic tradition, than as the pioneers of a thorough and modern discipline, such as we now associate with the clinical and pathological study of our art. On the other hand, the very imperfect scientific training of the general practitioner, the early age at which he was often withdrawn from school,

the distracting influence of the apprenticeship, and the tradesmanlike habits arising from the mode of his remuneration, all combined in keeping the L.S.A. upon a much lower professional level, and led to the survival in England of a kind of polypharmacy, which was, up to a quite recent date, nothing less than a discredit to the whole medical profession in this country. As Dr. Graves remarked, within the memory perhaps of some who still survive :—"The charge of inexperience is not necessarily confined to the beginner ; it applies equally to many an old practitioner, whose errors have grown and increased in strength during a long series of years, because, from defects in his original education, from the absence of a properly directed clinical instruction, he commenced practice without having previously acquired the habit or power of accurate observation."

In an address which I had occasion to deliver to the students of this University, at the opening of the Session 1882-83 (*loc. cit.*, pp. 7, 17), I ventured to claim, on behalf of three of our great academic centres in Scotland, to have anticipated, in no inconsiderable degree, the Medical Act of 1858 in rectifying the more glaring of these defects in medical education. I concede at once that the Scotch graduate or licentiate was by no means an ideal "Doctour of Physike"; and that, according to the standard of the Royal College of Physicians, he was long very deficient in some of those refining influences which, drawn from a remote past,

formed the character and moulded the career of such men as Linacre, Sir Thomas Browne, Sydenham, Mead, and Heberden. I concede also that he was for long, and perhaps still is, more or less wanting in the technical completeness of what is called the art of prescribing—the skill which enables a man to polypharmacize—if I may venture to coin a word, which I will further explain in terms of Voltaire's sarcastic phrase—neatly and profitably to put much physic and many complex mixtures, of which he knows little, into a body of which he knows less. But we claim for the Scotch graduate that, in the discipline of the art of medicine, he has, for several generations at least, been accustomed to make a good and a serious beginning by means of a regular academic curriculum, in which a foundation was laid for “physic,” in the systematized study of certain departments of natural science. No doubt there were difficulties in the way, even of attempting so much, when in England the accepted type of medical discipline was that of the “surgery-boy”—the apothecary's apprentice for three years—finished off by one year in a London hospital.¹ But in the middle of last century, when William Cullen, and after him Joseph Black (the discoverer of latent

¹ See the description of this type, as still existing “five and twenty years ago,” from an evidently English hand, in the *Times* of October 3rd, 1882; and my remarks upon it, delivered a few weeks afterwards, in the address above referred to.

heat), and after him Thomas C. Hope (the first investigator of the law of expansion of water according to temperature), became professors of chemistry, and then of physic, first in this University and afterwards in Edinburgh, it could not but be that a great impulse should be given to the idea that a physician was bound to learn at least *something* which could be dignified with the name of science, more or less exact, about the constitution of the world in which he lives, and the instruments with which he professes to work cures upon the human body. In point of fact, we know that such an impulse *was* communicated, and that in the Scottish Universities chemistry, as a science (and perhaps also botany), have never lost a distinctive place in the medical curriculum from that day to this. I wish I could say the same for physics proper—natural philosophy, as we call it—which has been, comparatively speaking, left out in the cold, or treated as a step-child. But in botany we have had at least one opening into the sciences of observation, which, though often depreciated by sciolists and persons calling themselves “practical men,” has maintained its ground among us, and has had added to it more or less of zoology, of comparative anatomy, and of natural history in general. Again, I concede that these things have often been imperfectly done, at different times, in our Scottish Universities; but in the mere attempt to do them all, and to fulfil a regular four years’ curriculum

with these as its basis, instead of the old, old wearisome variations upon the aphorisms of Hippocrates, and the controversies, ending in smoke, of vitalists, and solidists, and humoralists, I ask you to accredit the Scottish Universities with something like a new departure in the academic discipline of the physician.

I might enlarge upon this topic, but that I am not really so anxious, upon the present occasion, to dilate upon what has been done in the past as to inquire what is still wanting to bring about the professional ideal of the physician's training. I happen to have been closely considering this subject lately, with a view to the education of a son of my own; and without attempting to justify my opinions in all respects in detail, I will, as it were, think aloud for your impartial consideration some of the thoughts that have been passing through my own mind, even if in a crude and undeveloped form.

WHAT IS STILL WANTING IN THE TRAINING OF THE PHYSICIAN.

From the earliest days of my experience as a teacher it has been customary with me to use expressions and to act in a spirit, of which you may readily judge for yourselves from the following brief paragraph, taken from an address to students of medicine, delivered more than twenty years ago:—

“The first lesson to be learned in order to make all

other lessons possible is, in my opinion, this—to deal very largely with things and not with mere words; to realize as much as you can all your instruction by making it your own through personal observation; to suffer nothing, if it can possibly be avoided, to lie in the mind as a dead weight of vocables, oppressing the memory and dwarfing the intellect; but to bring everything into the living light of fact and of Nature, and thereby at once to assure to yourself the truth and exactness of your knowledge, while at the same time you are stamping it down upon the memory by the most sure and lasting of all technical methods.”¹

These words are not cited now as containing anything at all original or profound, but simply as an illustration of the spirit that, for a generation past or more, has ruled in the teaching of the Scottish universities. It is, in the very next line of the address, presented to the minds of our *alumni* of 1866 as “essentially the modern spirit of scientific inquiry, in virtue of which alone you can rise out of the dogmatisms and orthodoxies of the past, to make secure and beneficial progress in the knowledge of your profession.” If you agree with me that these words are not in themselves inappropriate, nor yet extravagant or fallacious, as applied to our art, and that they come fitly from one who followed in the line of succession, as an academic teacher, to William Cullen and Joseph Black—then I will ask you to go with me

¹ *Medical Education, Character and Conduct*, etc., (*ut supra*), p. 70.

one step further, and admit that during these hundred years past the Scottish universities have been, with more or less success, and amid considerable discouragements, labouring, on the whole, to build up again the great and noble ideal of the *physician as naturæ studiosus*, or Nature-seeker (Natur-Fürscher) as the Germans call it; and this, in accordance at once with the most modern methods and the most ancient and venerable traditions of the Hippocratic age.

No one can be more ready than I am to admit that there are, nay, that there must be, limitations in the very nature of the case to the too absolute recognition of this ideal. It is said by some that the spirit of modern science is ungenial and hard, even pitiless, and therefore not at all fitted for the ministrations of humanity; that it tends to make the suffering man, the *patient* (as we call him), into a mere *case*—a thing to be observed and noted rather than a man of like passions with ourselves, and therefore to be treated with consideration and sympathy. There may be just a grain of truth in this; and to whatever extent it is true, we of this medical school claim to be aware of the fact, and to be ever on our guard against the tendency. But none the less it may be affirmed with entire truth, and with cumulative evidence if need be, that all the evils inflicted on poor suffering humanity by the physician as scientist have been but a drop in the bucket as compared with those which have sprung from the too slavish adoption of

traditions, in which there never was any trace of the scientific spirit at all. The physicians satirized by Molière were very surely far more open to the charge of professional callousness than any of those in the present day who have been remarked upon as presenting, in their more favourable aspects, the tendencies of modern science. But it may be quite frankly conceded that when the physician, whether ancient or modern, has forgotten the claims of humanity, he is to be condemned alike, whether he proceeds along the lines of authority and scholastic tradition or according to the innovations of science and experiment. Moreover, it is certain that the day has long gone past when the physician, as healer, can expect for a moment to rival, or even come into competition with the scientist—the *physicus* in the etymological sense of the word—on his own ground. All that can be reasonably asked for him in these days is that he should be open to the influences, and should work in the spirit, and be subject to the corrections of the more exact sciences, in so far as they are applicable to the functions of the human body, whether in its sound or in its pathological condition.

I will venture in advance (although I know as yet but little more than the general subject on which he is to speak) to commend to your notice the forthcoming Address in Physiology by my esteemed colleague Professor M'Kendrick, as a sample of the kind of instruction which we of this university and medical

school consider to be among the legitimate developments of the study of *φύσις*, as applied to our art. But in doing so I shall venture to anticipate, because I am well assured that anything I can say here will only give expression to what will still more clearly emerge from that discourse, some of the discouragements to which I referred a moment ago—the difficulties we experience in training our students adequately on the lines we have laid down for them. These difficulties are manifold, and they are not of our making, nor are they peculiar to Scotland. I have only time now to refer to two of them.

The first of these difficulties belongs to the medical curriculum, in which, although chemistry, botany, and natural history have long been with us a necessary part and, so far as they go, a well-conceived and valuable scientific basis for the more technical part of our teaching, nevertheless physics proper—or, as we call it, natural philosophy—the very first step in the study of the laws of matter—is still but very imperfectly recognized. This great omission has arisen, no doubt, from the fact that these laws were supposed to be taught, and in a measure were taught, in connection with chemistry, which, from its old hereditary relations with pharmacy and the pursuit of the philosopher's stone and the elixir of life, had from time immemorial a claim on the physician. But when we consider how completely modern science has demonstrated the sub-

ordination of living bodies and physiological processes, not to a wholly detached set of laws termed vital, but to all the most elementary laws of matter; and, further, the correlation of all the physical forces throughout the universe, so that the living body and its environment act and react on each other throughout infinite space and time, it will be readily admitted, I think, that some kind of systematized instruction in physics, and not a mere elementary examination in mechanics, should be an essential part of an education with a view to the medical profession. And when we further consider that most of the great advances in medical diagnosis in the present day, through the stethoscope, microscope, laryngoscope, ophthalmoscope, sphygmograph, electricity as applied to muscle and nerve, etc., involve applications of pure physics which are neither remote from practice nor yet very easily mastered by the beginner; and that, in the case of electricity and other physical reagents, even heat and cold, etc., we are every day extending the domain of these sciences in therapeutics, and still more perhaps in preventive medicine and sanitary science, their claim for an extended recognition in teaching seems to be enormously enhanced. I am persuaded that in a very few years the physical laboratory will become an absolutely essential preliminary step in the education of the physician of the future, and that those who have not undergone this training will be hopelessly distanced in the race.

But this leads me directly to the other difficulty, or disadvantage, under which the Scottish universities have hitherto laboured in endeavouring to restore to the healing art its ancient association with the study of Nature. And this is by far the graver difficulty of the two, inasmuch as its rectification depends in no degree upon us or upon any possible change in the medical curriculum, but upon what amounts to a practical readjustment of the entire edifice of general education.

WANT OF EARLY TRAINING IN PHYSICS AND NATURAL SCIENCE.

The evil to which I now refer, as some of you have already, no doubt, perceived, is the extremely unprepared state in which the minds of most boys and young men are found at the time of their leaving school, as regards the most elementary truths and methods of physical science, and of the observation of Nature. It is now more than a quarter of a century since this great defect in the English public schools attracted the attention of a Royal Commission appointed in 1861, and there is no reason to suppose that in Scotland at the time in question the state of school education was in this respect much better than in England. "Natural science," the English Commission reported, with some slight exceptions, "is practically excluded from the education of the higher classes in England. Education with us is, in this respect, narrower than it was three centuries ago,

while science has prodigiously extended her empire, has explored immense tracts, divided them into provinces, and made them accessible to all.”¹ About the same time that this Commission was appointed to inquire into the public schools, a most unfortunate result followed the application of the revised code of 1861, both as regards the training colleges and the elementary day schools. Evidence of the most convincing kind was given in 1872 before another Royal Commission to the effect that “the limitation of the examinations (under this revised code) to the subjects of reading, writing, and arithmetic unfortunately narrowed the instruction given in the elementary schools; and that this change, together with the lower standard adopted in the training and examination of pupil teachers, and the curtailment of the syllabus of the training colleges, exercised a prejudicial effect on the education of the country.”

The recommendations of this last Commission,² presided over by the Duke of Devonshire, and commonly called by his name, were directed not only to the exposition of these evils in detail, but to their remedy; and it is not to be denied that some improvement as regards science teaching may have followed from these and other investigations conducted under

¹ *Report of the Public Schools Commission*, p. 32.

² *Second Report of the Royal Commission on Scientific Instruction and the Advancement of Science*, 1872, p. 9, section 8.

public authority, and with great care and impartiality. Yet in 1885 a most important and instructive presidential address was delivered to the British Association in Aberdeen which, amid a great deal of brilliant and elaborate argument on the general subject of science as an element in the prosperity of nations, contained these words:—"The Commissions of 1861, 1864, 1868, and 1873 have expressed the strongest disapproval of the condition of our schools, and, so far as science is concerned, their state is much the same as when the Duke of Devonshire's Commission reported. . . . No doubt there are exceptional cases and some brilliant examples of improvement since these words were written; but generally throughout the country teaching in science is a name rather than a reality. The Technical Commission which reported last year (1884) can only point to three schools in Great Britain in which science is fully and adequately taught. . . . A return just issued, on the motion of Sir John Lubbock, shows a lamentable deficiency in science-teaching in a great proportion of the endowed schools. While twelve to sixteen hours per week are devoted to classics, two to three hours are considered ample for science in a large proportion of the schools. In Scotland there are only six schools in the return which give more than two hours to science weekly, while in many schools its teaching is wholly omitted. *Every other part of the Kingdom stands in a better*

position than Scotland in relation to the science of its endowed schools. The old traditions of education stick as firmly to the school as a limpet does to a rock, though I do the limpet injustice, for it does make excursions to seek pastures new.”¹

It would have been extremely presumptuous in me to have asked your attention here to statements like these had they been made on my own authority, as the result of a necessarily limited personal experience; but when I add that these are the words of Sir Lyon Playfair, carefully considered, and advanced under all the sense of responsibility that can attach to a member of several governments, and from the Chair of the British Association only three years ago, it seems difficult to evade and impossible wholly to set aside the force of their appeal. I am well aware, indeed, that in Scotland, and even in our own city of Glasgow there are schools which have already made some considerable advances in the direction here indicated; and that in the High School of Glasgow, in particular, there exists now a chemical laboratory such as would do no discredit to any university. But, as regards the schools throughout the country, the advance has been so slow that, for a long time to come, our boys will

¹ Address by the Right Hon. Sir Lyon Playfair, K.C.B., M.P., F.R.S., President. *Report of the Meeting of the British Association for the Advancement of Science*, Aberdeen, 1885, pp. 7, 8.

leave their schools and our young men will continue to enter the universities in a state of great mental unfitness to grasp even the most elementary ideas of physical science, and therefore requiring more than ordinary care to ensure, at the very commencement of a medical education, the preparation in *physics* which will shortly become all-in-all to the true *physician*.

FARADAY'S EVIDENCE IN 1862.

Although I cannot here even attempt to discuss this matter as it deserves, I would fain hope that this mere allusion to it may induce some of my hearers to peruse some part of the evidence laid before the Devonshire Commission,¹ and even more, perhaps, that of a great number of eminent authorities who were examined at great length by the Public Schools Commission in 1862.² In particular I would direct attention to the words of one who has "built himself an everlasting name," not only as a profound and original investigator in physics but as the most attractive of teachers. It might well have been thought impossible

¹ *Sixth Report of the Royal Commission on Scientific Instruction*, 1875 (dealing with the teaching of Science in Public and Endowed Schools).

² *Report of H.M. Commissioners appointed to Inquire into the Revenues and Management of certain Colleges and Schools, etc., with an appendix and Evidence*, vol. 3; Evidence, Part 2; General Evidence, p. 363, including that of Dr. W. B. Carpenter, Sir Charles Lyell, Faraday, Hooker, Owen, and others.

that Michael Faraday, speaking with earnestness and conviction, though with the modesty of one who confesses himself at the outset to be "not an educated man," should be even as "a voice crying in the wilderness." Yet it was so. It appears in this evidence that in 1855, more than thirty years ago,¹ Faraday drew attention to the fact that the most highly educated minds in this country were often so entirely undisciplined in the merest elements (the A B C, as he expresses it) of the knowledge of *things* as opposed to *words* and *abstract ideas* that these minds in mature age remained impermeable to truths which to one with any scientific discipline at all were all but axiomatic. The "want of judgment in natural things" (as he calls it), the "great deficiency in the power of giving the reason why"—were such among the educated class as often to defeat the ends of justice in courts of law, and to lead to the most humiliating exposures of confident ignorance and presumption in matters of fact; and all this in the case of persons who had received every advantage, and who, in all kinds of learning and in the discipline then provided in the schools, stood in the front rank of Englishmen. And this deplorable result—this all but entire omission to educate one side of our many-sided human nature—was as gratuitous and

¹ In a lecture delivered at the Royal Institution, in presence of Prince Albert, and handed in to the Commissioners on Public Schools; Evidence (as above), p. 376.

wilful as it was deplorable. For Faraday had abundantly satisfied himself, through his personal experience as a teacher in the Royal Institution, that these elementary ideas, this primary cultivation of the "judgment in natural things," was a discipline not only easily conveyed into the minds of children, but even having a quite peculiar fascination for them. "The young mind," he says, "as I find it . . . is very observant and asks most acute questions. I do not find it, generally speaking, backward to understand a statement I make in simple language; and if I tell him this or that . . . and then shape it into a question, he can generally answer me. I must confess to you that I find the grown-up mind coming back to me with the same questions over and over again. . . . Their minds are not prepared to receive or to embody these notions, and that is where you want education; to teach them the A B C of these things. . . . I never yet found a boy" (he says in another place) "who was not able to understand by simple explanation and to enjoy the point of an experiment."

I am almost sorry that I cannot here trespass more largely on your time in quoting samples of this most remarkable evidence; but I will only detain you one moment longer over it in order to ask, Is it not most strange that we are able, many of us, to hear these things in 1888 as if they were a perfectly new and

fresh revelation of the capacities for education, in a scientific sense, of the minds of our children? How many of our own boys and girls, in the best schools that we have been able to send them to, have been in the way of securing even a moderate amount of the *kind* of discipline—the A B C of science here alluded to? For, observe, Faraday makes it an absolute condition of the training he proposes that it shall be *real* of its kind—that is, *experimental* and not *doctrinal*. And here arises the great difficulty—where are you to find the teachers? “You want men who can teach,” he observes, “and that class has to be created.” Again, “Lectures depend entirely for their value upon the manner in which they are given. It is not the matter, it is not the subject so much as the man.” And yet again, “Everything in these matters must depend upon the spirit and the manner in which the instruction itself is conveyed and honoured. If you teach scientific knowledge without honouring scientific knowledge as it is applied, and those who are there to convey it, you do more harm than good. You only discredit the study and the parties concerned in it.”

Faraday was perfectly well aware of the difficulties of detail that his views would have to encounter—the obstruction arising from the incompetency of the average schoolmaster¹ even to take in the idea of the import-

¹ On this point his words are definite enough, though I have refrained from inserting them in the text. “I am often asked,”

ance of elementary science as a discipline when properly taught, and to assign it, accordingly, a fair amount of time in the scheme of education. Although "not an educated man" (according to his own statement), he was a clear-sighted one, even where he had no personal experience. "I should be very sorry," he says, in answer to Sir Stafford Northcote, "that the introduction of science should be an injury to any other branch of knowledge. I say it in those general terms because I have not experience enough to know what the effect will be. As a general impression, . . . I think that one fifth certainly of the time which an individual devotes to study should be devoted to the attainment of natural knowledge. In what shape you should give it I cannot say. I think that in less than half a century it will deserve and obtain far more, but I am not for doing hastily an injury to the schools as they

he says in answer to Question 22, "what men to recommend to spread a knowledge of natural physical things. I cannot recommend such ; such men hardly exist at present. They want the A B C of science ; not the X Y Z ; they want the first elements. If I give a juvenile lecture, I lecture in as plain terms as I can to children, and I simplify as far as I can the ideas ; *but men are not educated as yet to do that : the ordinary school-master does not know how.*" And in another place he says of the ordinary school discipline, "It does not blunt the mind, but it so far gives the growing mind a certain habit, a certain *willingness to accept general ideas of a literary kind, and to say that all the rest is nonsense.* . . . It takes up the general impression that a *certain kind of knowledge, what I call the real knowledge, the knowledge of things, is of no importance.*" Qu. 30, 31.

are at present established. Nevertheless, I beg you to understand that I am a very imperfect judge on these matters."

I venture to place before you these words from an almost forgotten Blue Book, because they seem to me as fresh as ever in their lesson to us now, as regards the training of the physician of the future. Moreover, by the very modest as well as the true wisdom inherent in them, they convey an implied rebuke to the arrogance and all-sufficiency of science in its own eyes, as much as to the traditional dogmatism and quasi-authority of the schools as then existing. Moreover, they afford a cover for one who is no Faraday, but who has a very abiding sense of the importance of Faraday's view of the position, for pleading in behalf of this before the British Medical Association. Personally, I have long held the view that no child is too young to take in what this consummate master of science calls the A B C, that is the methods and some of the simpler processes of science; the manner *how* and the reason *why*, as Kingsley puts it; and in the ever-expanding cycle of the human faculties, from infancy upwards, it is quite curious to see how these, if they are not artificially interfered with and stunted, work into a spontaneous and (I believe) wisely-ordered harmony with all that is best in the linguistic and more commonly received scholastic elements of education, so that, far from suppressing, each of them protects, supports, and even

nourishes the other. But our present programme of school discipline is still too largely founded on the idea that at six or at seven years old, as the case may be, a child may be withdrawn, in a great measure, from this strictly natural, wholesome, and all-round education of the faculties, to have his nose buried for ten long years in books and papers and mental and other arithmetic, till his little eyes become myopic, and his little brain suffers a corresponding deformity. Athletic sports, as a counterpoise, are no doubt good, and industrial training better, in some cases, especially for the children of the poor; but they do not supply the "missing link," which can only be found in the early discipline of *φύσις*, pursued in the very spirit of Faraday. And here it is, therefore, that I think the physician, by returning in some measure upon the old, the oldest, lines of his professional discipline, may establish a strong claim to be heard, even in the matter of early scholastic training, as against the too narrow view of the professed educationist. He will at least have as strong a claim as the old Scotchwoman, who (no doubt in the interest of *φύσις*, though possibly she knew it not) is reputed to have ventilated her dissatisfaction with the received methods in the education (so-called) of one of her boys at the parish school in these pithy, if not sapient, words: "Sin' ever he gaed to the schule, his edication's been stopit a' thegither!"

RELIGIO MEDICI.

I have now to ask your attention, for a very few minutes only, to a concluding topic which I approach, indeed, not without fear and trembling, but which is of too much prominence and importance in itself, in connection with the subject of this address, to allow of my passing it by without some reference.

Probably there may be some of you here present who have been led to take note of a proverb which I am bound to say I have not been able to trace to its source, but which I suspect to have been the growth of that mediæval period to which allusion has already been made in the course of this address: "*Ubi tres medici, duo athei.*" I am not concerned in tracing out for you, even if I were able to do so, the most probable origins of this defamatory saying; nor shall I spend many words in venting my honest indignation upon it as a calumny and a reproach. It will be wiser and more profitable in every way to take it as it stands—as an example of what the late Earl Russell said of proverbs in general—"the wisdom (or in some cases the foolishness) of many," accentuated and condensed into a telling phrase by "the wit of one." From this point of view, it may be that there is something more or less worthy of careful reflection in this proverb, even if we should disown it in its literal acceptance. But I need scarcely say to those who are at all conversant

with philosophical studies, that to have been accused of atheism in the Middle Ages, may be quite the reverse of a real reproach to any man or set of men. From the time of Socrates downwards, indeed, this reproach has been a part of the stock in trade of vindictive, even if sincere, ignorance and bigotry all over the world; and to have been tabooed with atheism is often, almost without qualification, a passport into the ranks of those who have kept alive the flame of the human spirit, tending, and often vainly struggling upwards, to escape from the jargon of scholastic controversies, and the mephitic vapours of ecclesiastical strife. From this point of view it was inevitable, nay it was essential, that the physician or naturalist, in so far as he really was, or aimed at becoming, such, should incur this reproach. The marvel rather is, to us of this 19th century, that those who incurred it should have done so little to deserve it. The reproach, from a philosophical point of view inconsistent with atheism, but not seldom conjoined with it, of tampering in an evil sense with magic, was sure to be launched, in those days, at men who professed to be successfully investigating the "*secreta naturæ*" by others than the most orthodox methods. And the prosecution and imprisonment of Roger Bacon, on the one side, and of Galileo on the other, not to speak of the numerous "martyrs of science" both before and after these, will remain as an imperishable record of the blind and im-

practicable spirit of mediæval dogmatism, which, covering itself with the mantle of religion, stood athwart the path of the physician for hundreds of years. But although the condemnation on the side of godlessness came most easily and naturally out of the mouths of ecclesiastics, it is not by any means to be inferred that, either in ancient or modern times, it has been confined to them. Even in the kindly and thoroughly human word-picture, drawn for us by Chaucer, of the typical "Doctour of Physike," in the prologue to the *Canterbury Tales*, (line 440) it comes out that while

" Wel knew he the old Esculapius
And Dioscorides and eke Rufus,
Old Hippocras, Hali, and Gallien,
Serapion, Rasis, and Avicen,
Averrois, Damascene, and Constantin,
Bernard, and Gatisden, and Gilbertin,"

yet, alas! as a sad balance in the way of defect to all this learning of ancient, and also of then quite modern, date, it is quaintly and humorously added in a single line, without even an attempt at amplification or excuse, that

His studie was but litte on the Bible.

I had the curiosity to submit this passage to the judgment of two of the most noted students of early English literature—one of them perhaps the best living authority on Chaucer—that I know of in these islands, with the remark that in an age when the study of the Bible by lay persons is supposed to have been dis-

couraged, if not proscribed, by the Church, it is curious, to say the least, to find this made a matter of reproach, or even of satirical reflection, at all. The replies of both were alike instructive and quite in accord; but I give you *verbatim* that of the more professed Chaucerian, as being both brief and exactly to the point.

“Chaucer, I fear,” he writes, “was not altogether above popular prejudices, and among those to which he fell a victim was one which is as venerable in age as it is enduring, and to which the Emperor Napoleon gave expression during his last days, when he said of his physicians, ‘*Ces messieurs qui ne croient à rien.*’ Chaucer’s Doctor of Physic was very respectable and very well read, but he was something of a materialist. It is, I think, a mistake to suppose that in Chaucer’s time the Bible was a closed book to the laity in general. Even before Wiclif there were at least paraphrases in plenty. As to the learned, they certainly studied it, and the satire of Chaucer against the Doctor of Physic was that, while he took kindly to all sorts of learned books, he instinctively turned a cold shoulder to one where he would find something besides learning.”¹

¹ My other correspondent writes, *inter alia*, as follows:—“The like was said of the Arabian physieians, who, with the Greeks, were, up to and after Chaucer’s time, the chief sources of medical opinion. Averroes cared more for Aristotle than for Mahomet.

This, then, is the position and the stigma that we have to deal with as physicians or students of Nature and science in the present as in all former ages, in proof of which you will allow me simply to refer (without at all dwelling upon it) to an article in the actually current number of the *Contemporary Review*.¹ I will, therefore, close this address with a very few of my own thoughts on the subject, not at all in the way of controversy or of recrimination, but as expressing the matured convictions of a lifetime on a theme which must needs come home to every man's conscience in the exercise of our profession, and on which I should despise myself if either the desire of saying smooth things, or the fear of saying the opposite, were to move me in the least degree in addressing an assembly like this.

That the active ministry of the *healer*, if fitly and and was said to have expressed the wish for his soul—" *Moriatur anima mea morte philosophorum*." He is said to have called Christianity an impossible religion, Judaism the religion of children, and Mahomedanism the religion of pigs. Averroes died about 1216, but the Arabians before him bore the like character for putting science in the place of religion. When the studies of the Saracens were influencing in many departments of thought the best minds in Europe, the physicians among us based, necessarily, their science on the teaching of the Greeks and Arabs, which would give them speculations upon Nature that must often have been out of accord with mediæval orthodoxy."

¹ "The Scientific Spirit of the Age," by Frances Power Cobbe. *Contemporary Review*, July, 1888, p. 126.

diligently pursued in a serious and not a sordid spirit, cannot possibly tend to irreverence, or to what I would call essential atheism or godlessness, is, I think, so obvious that it is only wonderful that any doubt should ever have arisen on the subject. That ministry is the ministry of the body, no doubt; physical, therefore, in its aim; physical also, to a certain extent, in its limitations; and I am not one of those who would argue that, because it is so, the physician is thereby degraded and straitened unless he is also constantly invading the province of the religious teacher. But when we consider how closely the one province trenches on the other; and further, that in all the greater and graver crises of the lot of man on this earth—birth and death, sickness and health, moral contamination producing disease, and, on the other hand, physical disease inducing moral aberrations, and, with or without these, positive insanity—we must acknowledge that the spiritual element in man is brought, necessarily, into the sphere of the physician's daily work. I am confident there is not a man in this room who will not emphatically agree with me in saying that a physician who even inclines towards irreverence as his habitual attitude of mind is thereby disqualified from performing aright the greatest of all the services that at times he can render to the sick. I am not saying—because I do not know—how it may have been in times such as the age of Chaucer,

when the iron tyranny of the Church made independent and personal convictions often impossible to a physician conversant chiefly with his art ; or in the age of Napoleon, when the disintegrating and revolutionary forces which still prevail largely in France were almost at their maximum of destructiveness ; but I do say that in this our own time and country, when the thoughts of men, however distracted in details, are seriously bent upon the greatest of all questions involving both time and eternity, the practising physician who can treat these questions with unseemly levity, or who even stands aside and says that they are out of his reckoning altogether, is an anomaly, and, to that extent, a man out of his place in our social system and atmosphere. But I desire to qualify this statement with another, which may or may not appear to some of you to be opposed to it, that in the case of the man of pure science, or the absolutely devoted naturalist, I can easily recognize, even in the most advanced agnostic (in his own estimation), one who in the confusions of the present time is really pervaded by what I make bold to call a Divine spirit ; one who in the search after truth and fact (as they are in Nature) is so regardful of these and these alone that he refuses to commit himself to positions in abstract thought that may seem to himself, or to others, to carry implications opposed to the perfect impartiality of his research. I will not here name living men, to whom, in my

opinion, or (I would almost say) according to my knowledge of them, this description is fairly applicable. But in the case of one great man, at least, who has lately passed away from our human and temporary judgment, we have been favoured with the most ample materials for seeing into the innermost convictions of a very noble character; and I say here, without a moment's doubt or hesitation, that a man who will, in the face of this evidence, call Charles Darwin a merely atheistic, an irreligious, or an irreverent man, pronounces thereby a most severe criticism on religion itself, and an implied condemnation on half the saints in the calendar, to whichever of the churches he may pin his faith. For in Charles Darwin (however we may explain it) we have, if his character is carefully and charitably studied, a man of the very stuff and moral fibre of which the most eminent saints are made. Grant, if you please, that he fell away from the conception of God as entertained by you, and to that extent came short of your ideal of humanity and of what you call saintship; no one was more sensible of this, or more candid in confessing it, than he was himself, when he described a large part of his own higher nature as having become (as he said) "atrophied" in the life-long course of developing his other faculties, which he almost with a grim humour (as one might say) described as those of "a machine for grinding

large general laws out of large collections of facts.”¹

But, while you learn to use the lessons, grave as they undoubtedly are, of this magnificently candid avowal on Darwin's part, do not close your eyes to the life-long and unswerving devotion, amid pain and physical disabilities, to the work that was given him to do ; the constancy, the transparent simplicity of character, the courtesy under differences of opinion, the chivalrous self-repression in argument, the consummate sense of justice, the abiding conviction that truth (shall we not say for him, God's truth) stands far and away above the level of human passions and infirmities in expressing or defending it ; above all, take note of the abounding, the almost inexhaustible charity (in the highest Christian sense of the word) of that sweetly-composed nature, whether as shown in his published works, in his correspondence, or in the sacredness of the domestic circle ; and then say for yourselves in what hierarchy of canonized saints you will find many that are his superiors, or even his equals, in all of these eminently Christian virtues and graces taken together. May we not say, then, that the life and work of Charles Darwin are a permanent lesson to all of us, whatever

¹ *Darwin's Life*, vol. i. p. 101. Compare p. 311, where he speaks of his early emotions in the presence of grand scenery as having completely died out, so that “it may be truly said I am like a man who has become colour-blind.”

we may think of his theories and his confessedly somewhat agnostic position, not to restrict too much our own conceptions of what may or may not enter into the religious idea of a man's life here, but to leave it in all humility to one who looks on the various phases of man's aspirations "with larger, other eyes than ours," and to whom it is at least possible, if not probable, that in this our day (as in more ancient days) the current readings of the religious character may be sometimes quite changed from ours, when in the Kingdom of God the "first shall be last, and the last first."

I have not made this allusion without a definite purpose, though feeling that I am on dangerous ground, on which there may be some reasonable hesitation in admitting that one who has intellectually lost hold of some of the most central truths of religion, may nevertheless retain a more than ordinary share of its innermost spirit. But, if (as I am most ready to admit) the life and work of the great modern apostle of evolution tend towards the belief that science in these days, and especially the study of natural phenomena in the organic world, make, on the whole, rather for the weakening and dissolution than for the building up of religion, then it will assuredly be the part of the physician of the future to act as the mediator between the destructive and the constructive influences. Although he can never again become what he was in the early ages, the sole or the chief representative of

physical science, he must always be, and must become more and more, a man trained in its discipline and familiar with its resources ; while, on the other hand, his close relations with suffering humanity, and with the awful and solemnizing ministrations of life and death, will serve to keep him in a region apart from that of pure science, and one in which, from day to day, the voices from the unseen world (if he will only listen) are ever sounding close to his ears. It is not for me, here and now, to show how this work of conciliation is likely to be undertaken or to be accomplished, but that it must needs be undertaken, and will ultimately be accomplished no one can, I think, doubt who has not allowed himself to become, as Darwin puts it, "colour-blind" to the higher spiritual influences. And in this work of conciliation the Bible will assuredly hold its own as the great spiritual guide of humanity, and as an inexhaustible treasury of spiritual wisdom, if it be studied according to the meaning of its own simple words, and not according to the glosses that have been passed upon these by innumerable generations of contending theologians.

The physician of the future will, I believe, be much more, instead of less, inclined to make his study of the Bible than hitherto, and in this respect will differ greatly from the representative and typical "Doctour of Physike" of the *Canterbury Tales*. But he will study it in the spirit of modern scientific freedom and

of historical research, not under the influence of mere tradition and ecclesiastical authority. And thus only, as it seems to me, can the reconciliation of science and religion ever be brought about.

In the address I had the honour to deliver last year in Dublin, I reproduced a sentence from one more than twenty years old, in which I had said as regards our own historical position at that time (but only in reference to the healing art), "The day of orthodoxies is over; the day of real science is only just dawning." The whole course of that address, as well as of the one which preceded it, was directed towards the demonstration of the enormous evils that have accrued to humanity and to the medical art from a blind reliance upon the tradition of the ages, and often upon traditions wrongly interpreted. "It is so hard," writes our humorous and venerable *confrère* across the Atlantic, Oliver Wendell Holmes,¹ "to get anything out of the dead hand of medical tradition. The mortmain of theorists, extinct in science, clings as close as that of ecclesiastics defunct in law." The abuses of blood-letting, of a senseless and obstructive polypharmacy, and of innumerable so-called remedies, either inert or positively mischievous, which have had to be cleared out of the way before medical science and practice could even begin to be reasonably simple and intel-

¹ *Currents and Counter-Currents in Medical Science; with other Addresses and Essays.* By Oliver W. Holmes. Boston, 1861, p. 22.

ligible, have been a lesson to all of us, I trust, as to this "dead hand of medical tradition." How can we, of all men, fail to see that the same kind of mortmain, precisely the same or similar dead scholastic orthodoxies, have locked up the living words of the New Testament, and of our Lord Jesus Christ himself, in formulas around which the dust of ages has accumulated, till the dead letter has well-nigh choked out the living and life-giving spirit of Christianity. The beautiful story of a Divine life and death, the miracles of healing, the sermon on the mount, the parable of the prodigal son, with its ever fresh lesson of the fatherhood of God; that of the good Samaritan, with its large sense of human brotherhood, are conspicuous by their absence as principles from those creeds of the Church which profess to be the formulated essence of Christian doctrine; and instead of these we have the controversies of the first four centuries, marred and scarred all over with the traces of very human, very bitter, and often sanguinary conflicts, the scrambles for power of this or that bishop, lording it over the heritage in opposition to the very words of St. Peter, and giving to all time an example not of the "peace and goodwill" with which the first Christmas day was ushered in, but rather of the sad prophecy "not peace, but a sword," which only too truly foreshadowed the ecclesiastical as opposed to the Christian *régime*.¹

¹ On the Apostles' Creed (so-called), see *Histoire du Credo* ;

The physician of the future will do well if he remembers always the pernicious despotism which has been exercised over his own art (though in a minor degree) by the fetters of these dead orthodoxies, and will therefore be very slow to acknowledge their claims upon him to any more than a historical regard, even in the realm of theology. He will say of them in the noble words of the Westminster Confession, which (but for the formula connected with it in our Scottish churches) might almost be taken as the magna charta of Christian liberty in all such documents:—"All synods and councils since the Apostles' times, whether general or particular, may err, and many have erred; therefore they are not to be made the rule of faith or practice, but to be used as an help in both."¹ But, I desire you very specially to remark as my own personal anticipation, shared, I have no doubt, by many of those now present,—the physician, in his character of student of Nature, will make, and in the end will estab-

Par Athanase Coquerel, fils, esp. p. 20.—On the Nicene Creed, Milman; *History of Christianity*, Vol. iii., Index; *History of Latin Christianity*, Vol. viii. p. 391. The creed commonly called of St. Athanasius speaks for itself, and requires no commentary. On the Westminster Confession many most interesting personal details will be found in the *Letters and Journals of Robert Baillie*, A.M., Principal of the University of Glasgow, MDCXXXVII, MDCLXII. 3 vols. Edinburgh, 1841.

¹ *The Confession of Faith*, agreed upon by the Assembly of Divines at Westminster, etc., chap. xxxi. Of Synods and Councils, 1643.

lish, this claim to emancipation, not in virtue of any irreverent, much less atheistic, tendencies, but for the very reason that he has access to a revelation of God, distinct from the written revelation, and requiring a wholly distinct method of investigation. In obedience to this call he will, sooner or later, absolutely decline to walk in the leading-strings of ecclesiastical tradition. And in so doing he will (far from fulfilling old Dan Chaucer's satirical description) studiously insist upon the Bible, and especially the New Testament, and above all, the recorded life, works, and words, of our Lord himself, as containing, by implication, the charter of his emancipation, and the only perfectly free religious atmosphere as yet opened to human thought and inquiry. In proof of which I will now only submit one pregnant saying, with which, if it be indeed the word of God, all those who believe it to be such are bound to find all the other words of God in entire accord:—

“Henceforth I call you not bond-servants; for the bond-servant knoweth not what his lord doeth: but I have called you friends; for all things that I have heard of my Father I have made known unto you.”—
John xv. 15.

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